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IS 6052 (1988): Glass condensers [CHD 10: Glassware]

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AMENDMENT NO. 1 JANUARY 2006
TO
IS 6052 : 1988 SPECIFICATION FOR GLASS CONDENSERS

(First Revision)

(*Page* 1, *clause* **3.2.3**) — Substitute the following for the existing clause:

'**3.2.3** *Coiled distillate condenser* — 200, 300, 400, 500 and 600 mm (*see* Fig. 3).'

(*Page* 3, *Fig.* 3) — Substitute the following note under the diagram for the existing:

'NOTE — In case of condenser not provided with conical ground joint at stem, the stem shall have the following dimensions:

Stem

Length = 115 ± 5
Diameter = 13 ± 0.5
L = 200, 300, 400, 500 and 600 ± 20

All dimensions in millimetres'.

(*Page* 3, *Fig.* 4) — Substitute the following under the diagram for the existing matter:

'L = 200, 300, 400, 500 and 600 ± 20

All dimensions in millimetres.
FIG. 4 GRAHAM CONDENSER'

(CHD 10)

Reprography Unit, BIS, New Delhi, India

UDC 542.482.8 :542.231.72 IS : 6052 - 1988

Indian Standard

SPECIFICATION FOR GLASS CONDENSERS

(First Revision)

1. Scope — Prescribes the details of water cooled glass condensers suitable for general use in laboratories.

2. Terminology

2.1 For purpose of this standard, the definitions given in IS : 1382-1981 'Glossary of terms relating to glass and glassware (*first revision*)', in addition to the following definition shall apply.

2.1.1 *Condensers* — A piece of laboratory apparatus designed for the exchange of heat between two fluids. It is used for condensing vapours or for cooling or heating a liquid.

3. Classes and Types

3.1 Five types of condensers of three classes, according to design and the relative position of the cooling medium, are specified with the jacket lengths as shown below against each type.

3.2 *Water Jacketed Condensers*

3.2.1 *Liebig-west condenser* — 200, 300, 400, 500, and 600 mm (*see* Fig. 1).

3.2.2 *Allihn condenser* – 200, 300, 400, 500, and 600 mm (*see* Fig. 2).

3.2.3 *Coiled distillate condenser* — 200, 400, 500 and 600 mm (*see* Fig. 3).

3.3 *Coolant-tube Condenser*

3.3.1 *Graham condenser* — 200, 300, 400, 500 and 600 mm (*see* Fig. 4).

3.4 *Double Action Condenser*

3.4.1 *Jacketed coil condenser* — 200, 300 and 400 mm (*see* Fig. 5).

4. Material

4.1 Condensers shall be constructed from clear glass of suitable chemical and thermal properties.

4.2 Internal stress and visible defects in the glass shall be reduced to a level sufficient to minimize the possibility of fracture due to thermal or mechanical shock.

5. Construction

5.1 The extremities may be plain (*see* **5.4**) or fitted with conical or spherical interchangeable ground glass joints (*see* **5.3**).

5.2 *Shapes of Water Connections* — It shall be either of the two shapes as shown in Fig. 6 and shall preferably face towards the same side of the condenser.

5.3 *Ground Glass Joints*

5.3.1 Conical ground glass joints shall comply with the requirements of IS : 5165-1969 'Specification for conical ground glass joints.

5.3.2 Spherical ground glass joints shall comply with the requirements given in specification for spherical ground glass joint (*under preparation*).

5.4 The wide end of plain-end condensers shall be fire polished and the stem shall be either ground or fire polished.

Laboratory ware and Related Apparatus Sectional Committee, CDC 33; General Laboratory Glassware Subcommittee, CDC 33 : 4 [Ref: Doc : CDC 33 (9208)]

Adopted 16 April 1988

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Gr 2

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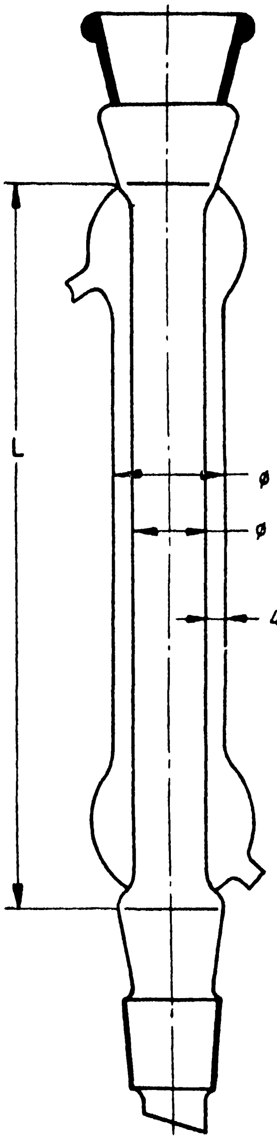


Note — In the case of codensers not provided with conical ground joints, the wide end and the stem shall have the following dimensions:

Wide End

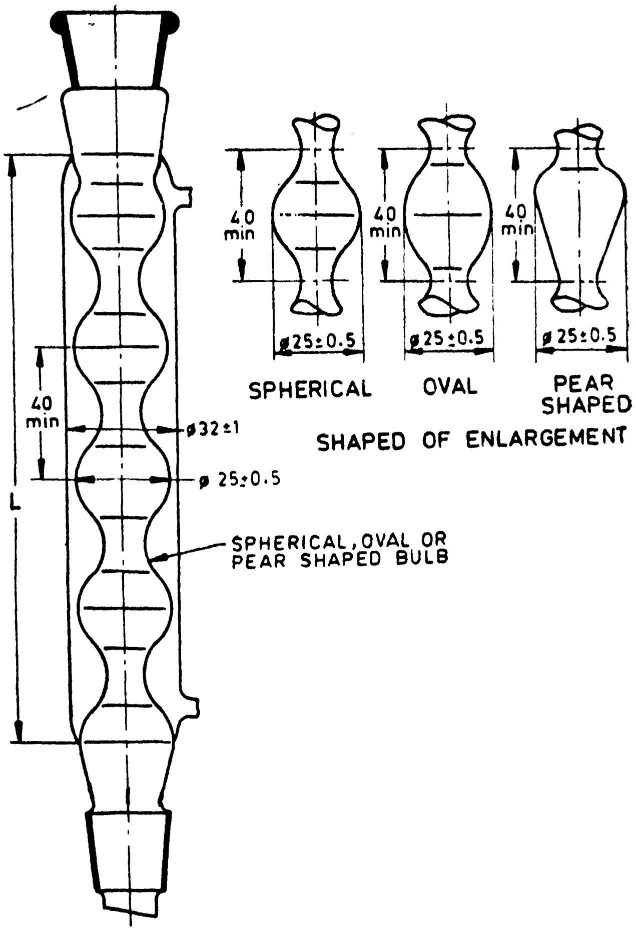
Length = 75 ± 5
Diameter = 22 ± 0.5

Stem

Length = 115 ± 5
Diameter = 13 ± 0.5
L = 200, 300, 400, 500 and 600 ± 20

All dimensions in millimetres.

FIG. 1 LIEBIG-WEST CONDENSER



Note — In the case of condensers not provided with conical ground joints, the wide end and the stem shall have the following dimensions:

Wide End

Length = 75 ± 5
Diameter = 22 ± 0.5

Stem

Length = 115 ± 5
Diameter = 13 ± 0.5
L = 200, 300, 400, 500 and 600 ± 20

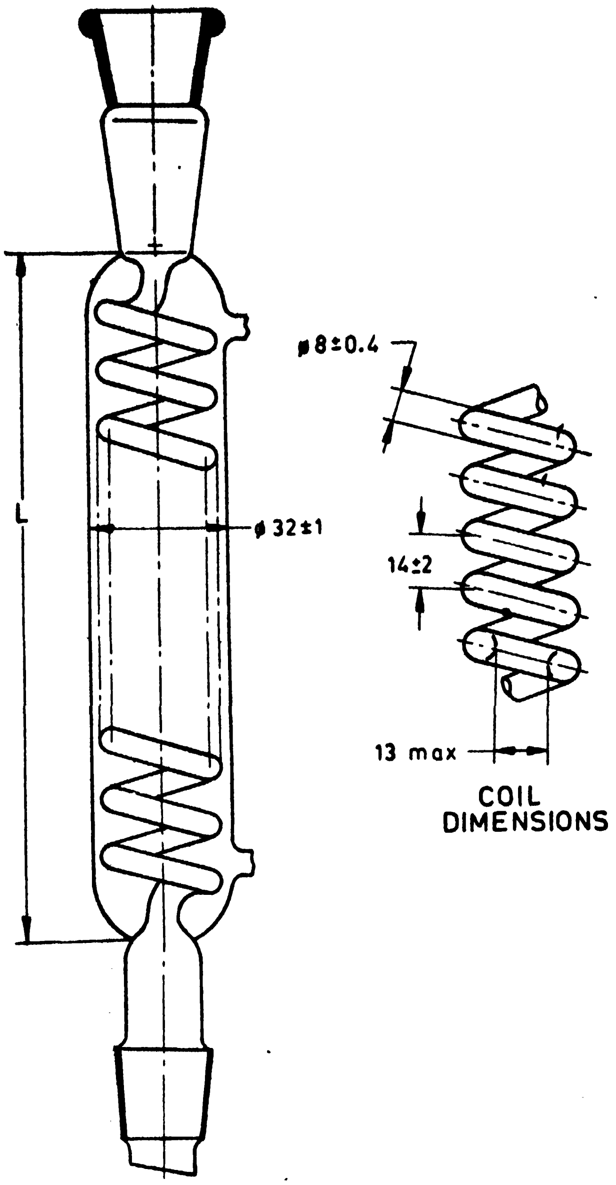
All dimensions in millimetres.

FIG. 2 ALLIHN CONDENSER

5.5 The drip tip at the lower end of the condenser shall be cut off at an angle of not less than 30° to the plane of right angles to the longitudinal axis of the condenser.

6. Dimensions

6.1 The dimensions on jacket length, inside and outside diameter of jacket, wide end, stem and shape of water connections shall be as prescribed in Fig. 1 to 6.



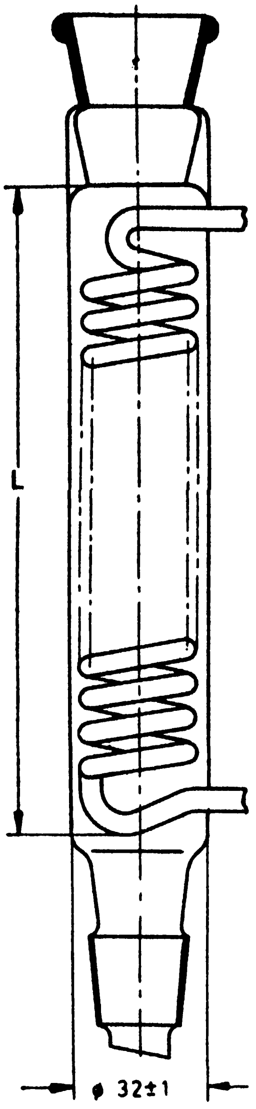
Note — In case of condenser not provided with conical ground joint at stem, the stem shall have the following dimensions:

Stem

Length = 115 ± 5
Diameter = 13 ± 0.5

All dimensions in millimetres.

FIG. 3 COILED DISTILLATE CONDENSER



All dimensions in millimetres.

FIG. 4 GRAHAM CONDENSER

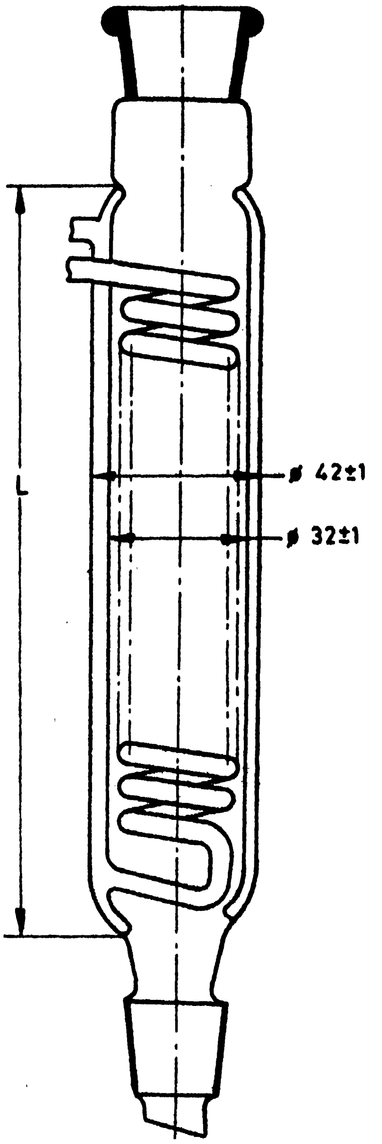
7. Marking and Packing

7.1 *Marking* — The following inscriptions shall be permanently and legibly marked on the condensers:

a) Jacket length;
b) Manufacturer's name or his recognized trademark, if any;
c) Size of ground joints, if used; and
d) Code number to trace the batch of manufacture.

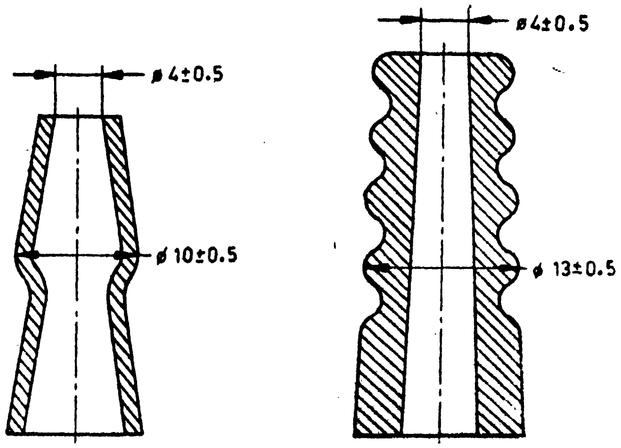
7.1.1 The condensers may also be marked with the Standard Mark and the details can be had from the Bureau of Indian Standards.

7.2 *Packing* — The condensers shall be packed as agreed to between the purchaser and the manufacturer.



For coll dimensions *see* Fig. 3
L = 200, 300 and 400 ± 20
All dimensions in millimetres.

FIG. 5 JACKETED COIL CONDENSER WITH CONE AND SOCKET



All dimensions in millimetres.

FIG. 6 SHAPES OF WATER CONNECTIONS

8. Sampling

8.1 The method of drawing representative samples of condensers and the criteria for their conformity shall be as prescribed in IS : 4426-1967 'Methods of sampling laboratory glassware and medical glass instruments'.

EXPLANATORY NOTE

The standard was originally published in 1970. Subsequently, International Organization for Standardization (ISO) has brought out ISO : 4799-1979 'Laboratory glassware condensers'. While revising the standard, it has used this ISO document as the guidelines but selected a natural series of lengths for the condensers, namely, 200, 300, 400, 500 and 600 mm which are more frequently used in our country. The tolerances are consequent with the standard tubes which are available in the country.

In this revision, glass condensers with conical ground glass joints, which are largely used for general laboratory purposes are included. The air condensers are omitted and ordinary condensers without conical ground glass joints are aligned with those with ground joints. The types and nominal sizes of condensers provided are those which are most commonly used. Condensers of special shapes, sizes and for special purposes are not covered by this standard.

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